Effect of IR Radiation on the Hydration of Cement Based Mortars

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The building's plastering with cement mortar result controversial in the Mediterranean area at summer time, particularly in towns in which temperature reaches values higher than 50 ºC.
Previous researchers have been reported the effect of temperature in the hydration of cement compounds, for which the specimens studied were normally heat cured at controlled environmental humidity. Nevertheless, the ambient conditions of a mortar wall are completely different in dry atmosphere. The absence of humidity and the rapid increase of mortar temperature by the solar radiation modify abruptly its physico-mechanical properties.
This work relates to the effect of solar radiation on a freshly mortar wall. Mortar probes where exposed to IR radiation in the laboratory at controlled temperatures in the 40-80 ºC range at different periods of time. After that, some of the probes where subjected at different sorts of soaking. Mechanical and physico-chemical characteristics (XRD, IR) confirmed the suitability for plastering external walls at moderate temperatures during short periods.